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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,450	09/09/2003	Ray Won	100325.0074US2	4941

34284 7590 03/26/2004

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EXAMINER

SMITH, DUANE

ART UNIT PAPER NUMBER

1724

DATE MAILED: 03/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/659,450

Applicant(s)

WON ET AL.

Examiner

Duane S. Smith

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eb

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-38 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 24 and 32-36 is/are allowed.
- 6) ☒ Claim(s) 26 and 27 is/are rejected.
- 7) ☒ Claim(s) 25-31, 37 and 38 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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1. Status of parent case should be updated at page 1 line 3. The status of nonprovisional parent application(s) (whether patented or abandoned) should also be included. If a parent application has become a patent, the expression "now Patent No. _____" should follow the filing date of the parent application. If a parent application has become abandoned, the expression "now abandoned" should follow the filing date of the parent application.
2. Claims 25-31 and 37-38 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 25-31 and 37-38 recite functional process limitations that do not further limit the positive apparatus structure of the recovery plant.
3. Claims 26,27, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 26 "less than 20 psia" is indefinite , in that such a range is broader in scope than the more limiting range of 2 psig and less than 20 psia of the independent claim. It is unclear how such a broader range can be encompassed by the narrower range.

In claim 27 " less than 300 psia" is indefinite, in that such a range is broader in scope than the more limiting range of 2 psig and less than 20 psia of the independent

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claim. It is unclear how such a broader range can be encompassed by the narrower range.

4. Claims 24,32-36 are allowed over the prior art of record.
5. Claims 26,27 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.
6. Claims 25-31,37-38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten to overcome the objections.
7. The following is an examiner's statement of reasons for allowance: None of the prior art of record teach nor suggest the claimed features of a recovery plant that recovers a gaseous component from a process gas having a pressure of between about 2 psig and less than 20 psig, including an absorber employing a lean solvent and a semi-lean solvent that absorb the gaseous component from the process gas, thereby producing a rich solvent, a semi-rich solvent, and a lean process gas; a regenerator fluidly coupled to the absorber, wherein the regenerator extracts the gaseous component from the rich solvent, thereby regenerating the lean solvent and the semi-lean solvent, a solvent flow control element, fluidly coupled to the absorber, that combines at least part of the semi-rich solvent with at least part of the semi-lean solvent to form a mixed solvent; an optional cooler fluidly coupled to the absorber, the cooler cooling the mixed solvent; and a connecting element that feeds the cooled mixed solvent into the absorber. The closest prior art of record is to Grover(US Patent No. 4,702,898). Grover discloses a plant to recover gaseous components from a process gas(1) including an absorber(3) employing a lean solvent(43,44) and a semi-lean

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solvent(25) and producing a rich solvent(4), semi-rich solvent(26) and lean process gas(45); a regenerator(13) which produces a semi-lean solvent(20,22,24) and another regenerator(31) which produces lean solvent(33), a solvent control element(27) which mixes semi-rich solvent(26) with semi-lean solvent(24) to form a mixed solvent stream(25), and a cooler(28) for cooling solvent. The instant invention differs from Grover in the recitation of a single regenerator to produce the semi-lean solvent and the lean solvent from the rich solvent," a regenerator fluidly coupled to the absorber, wherein the regenerator extracts the gaseous component from the rich solvent, thereby regenerating the lean solvent and the semi-lean solvent". There being no motivation to suggestion in the prior art of record to utilize a single regenerator. In fact Grover teaches away from a single regenerator at col. 2 lines 20-45 wherein two regenerators are required to wherein the overhead stream(19) from the steam stripping section(31) is utilized in the second regenerator(13) to form a semi-lean solvent(20) in order to make use of previous unutilized heat sources to decrease the heat load in the stripping system(col. 2 line 60-col. 3 line 25). Thus the instant invention is both novel and unobvious over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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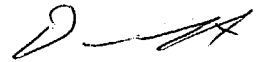
Giammarco et al '608, '404, '863, '569, Anderson, Suzuki et al., and Chakravarti et al disclose similar apparatus.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duane S. Smith whose telephone number is 571-272-1166. The examiner can normally be reached on 8:30-6:00 M-TH.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on 571-272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Duane S. Smith
Primary Examiner
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3-18-04

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